



UCSC

University of Colombo, Sri Lanka

University of Colombo School of Computing



**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY
(EXTERNAL)**

Academic Year 2024 — 2nd Year Examination — Semester 4

IT4106 — User Experience Design

Part 1 - Multiple Choice Question Paper
(2 Hours for both Part 1 and Part 2)

Important Instructions

- This paper has **two (2) parts, Part 1 and Part 2**.
- The total duration of **both Part 1 and Part 2 is 2 hours**.
- The final mark for the paper will be determined by averaging the scores of Part 1 and Part 2, each of which is graded out of **100**.
- The medium of instructions and questions is English.
- This paper (Part 1) has **25 MCQ questions** on **7 pages**. Answer **all** questions.
- Each question will have **5 (five)** choices with **ONE OR MORE** correct answers.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from -1 (All the incorrect choices are marked & no correct choices are marked) to +1 (All the correct choices are marked & no incorrect choices are marked). However, **the minimum mark per question would be zero**.
- Answers should be marked on the **special answer sheet** provided.
- Note that questions appear on both sides of the paper. If a page or part of a page is not printed, please inform the supervisor/invigilator immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices**.
- Any electronic device capable of storing and retrieving text, including electronic dictionaries, smartwatches, mobile phones, and Calculators are **not** allowed.
- *All Rights Reserved*. This question paper can NOT be used without proper permission from the University of Colombo School of Computing.

- 1) Which of the following **best** describe(s) the purpose of User Experience (UX) Design?
- (a) Designing the internal logic of algorithms
 - (b) Creating a cohesive and meaningful experience for users
 - (c) Improving the usability and accessibility of a product or service
 - (d) Reducing the cost of server infrastructure
 - (e) Ensuring code follows software engineering standards
- 2) Which of the following correctly distinguish(es) between User Interface (UI) and User Experience (UX) design?
- (a) UI design focuses on the visual aspects of a product, such as buttons and menus
 - (b) UX design includes understanding users' needs and improving their overall interaction
 - (c) UX and UI are two names for the same concept
 - (d) UX is concerned with product layout, while UI is only about functionality
 - (e) UI and UX both include database structure optimization
- 3) Which of the following reflect(s) the contributions of the *Third HCI Paradigm* to Interaction Design?
- (a) Emphasizing the situated, social, and cultural aspects of technology use
 - (b) Focusing entirely on computational models of user cognition
 - (c) Supporting users' appropriation of technologies beyond original design intentions
 - (d) Prioritizing interaction efficiency over contextual relevance
 - (e) Designing experiences that reflect the user's values at the site of interaction
- 4) Which of the following is/are *true* about conceptual models in Interaction Design?
- (a) They provide a high-level description of how a system is organized and operates
 - (b) They eliminate the need to involve users in early design stages
 - (c) They help users form mental models of how a system works
 - (d) They should be developed after the physical design is finalized
 - (e) They help designers think through user interactions before choosing UI elements
- 5) Which of the following statements correctly describe(s) interaction types?
- (a) Instructing involves direct manipulation of digital objects
 - (b) Conversing refers to engaging in dialog with a system (e.g., voice assistant)
 - (c) Manipulating includes dragging icons or using gestures in physical or virtual spaces
 - (d) Exploring involves moving through physical or virtual environments
 - (e) Responding is about users giving commands to initiate system action

6) Which of the following statement(s) is/are true about *multimodal interfaces* in user experience design?

- (a) They allow users to interact using a single consistent input like keyboard only
- (b) They support interaction using a combination of input/output modes such as speech, gesture, and touch
- (c) They are designed only for visually impaired users
- (d) They enhance expressiveness and flexibility in human–computer interaction
- (e) They replace all need for GUI-based interfaces

7) Which of the following is/are characteristics of *Experiential Cognition*?

- (a) Involves deliberate, effortful thinking and judgment
- (b) Occurs automatically and unconsciously during routine activities
- (c) Includes driving, reading, or watching a video
- (d) Requires planning and decision making
- (e) Used when designing or solving novel problems

8) Which of the following statements is/are true regarding *Mental Models* in interaction design?

- (a) Mental models are often complete and technically accurate
- (b) Users quickly form mental models, even before using a product
- (c) Designers should match conceptual models with users' mental models
- (d) Mental models remain unchanged after first exposure to a system
- (e) Misunderstandings due to inaccurate mental models are common

9) Which of the following statements reflect(s) key insights from the *Distributed Cognition* framework in HCI?

- (a) Cognition occurs only within the individual's mind
- (b) Cognitive processes are distributed across people, tools, and environments
- (c) Interaction with external representations (e.g., documents) is part of cognitive activity
- (d) Interfaces should focus exclusively on reducing internal memory load
- (e) An airline cockpit team interacting with instruments and the environment illustrates distributed cognition

- 10) Which of the following is/are advantages of using structured interviews during data gathering in UX design?
- (a) Easy to replicate across participants
 - (b) Provides highly flexible responses
 - (c) Generates quantitative data for comparison
 - (d) Reduces interviewer bias
 - (e) Encourages natural conversation flow
- 11) Which of the following statements is/are correct regarding *triangulation* in data gathering?
- (a) It ensures reliability by using multiple data sources
 - (b) It refers only to using multiple interviewers
 - (c) It involves using different theoretical perspectives
 - (d) It increases data quality by validating results through multiple methods
 - (e) It eliminates the need for participant consent
- 12) Which of the following accurately distinguish(es) between *contextual inquiry* and *traditional interviews* in UX research?
- (a) Contextual inquiry treats the user as an expert performing actual tasks in a real context
 - (b) Traditional interviews always involve passive data collection in artificial environments
 - (c) In contextual inquiry, the researcher adopts the role of an apprentice to observe and learn
 - (d) Traditional interviews always use scripted, closed-ended questions
 - (e) Contextual inquiry avoids recording user activity due to privacy concerns
- 13) Which of the following is/are true about *quantitative data* in UX research?
- (a) It is expressed in the form of numbers
 - (b) It can be statistically analyzed
 - (c) It is based on themes, stories, and narratives
 - (d) It is collected through observation only
 - (e) It allows for measuring magnitudes and patterns
- 14) Which of the following is/are valid steps in creating an *Affinity Diagram* during qualitative analysis?
- (a) Transcribe audio interviews into numerical values
 - (b) Group similar observations using sticky notes
 - (c) Identify and cluster post-its based on thematic similarity
 - (d) Convert categories into bar graphs for statistical analysis
 - (e) Rank clusters and look for connections between themes

- 15) Which of the following statements correctly describe(s) Critical Incident Analysis?
- (a) It focuses on identifying specific events that are significant or disruptive during user interactions
 - (b) It ignores surrounding data and evaluates only final outcomes
 - (c) It involves analyzing incidents such as user confusion, errors, or breakdowns in system use
 - (d) It is mainly used to group user comments into general themes
 - (e) It helps designers investigate usability issues by closely examining contextual details
- 16) Which of the following best describe(s) *Grounded Theory* as an analytic framework in UX research?
- (a) It uses pre-defined theoretical assumptions from literature
 - (b) It starts with hypotheses and tests them with numerical data
 - (c) It develops theories directly from data using coding and iteration
 - (d) It relies on open, axial, and selective coding processes
 - (e) It avoids data interpretation to maintain objectivity
- 17) Which of the following is/are limitations of using *structured notations* for presenting research findings?
- (a) They may exclude subtle context or emotional cues
 - (b) They provide too much flexibility for subjective interpretation
 - (c) Audience unfamiliarity can reduce communication clarity
 - (d) They ignore numerical precision and quantitative trends
 - (e) They highlight only specific elements while suppressing others
- 18) Which of the following is/are typical features of *low-fidelity prototypes*?
- (a) Quickly and inexpensively built
 - (b) Close resemblance to the final product
 - (c) Useful for early user testing and concept exploration
 - (d) Difficult to revise once designed
 - (e) Made using materials like paper or cardboard

- 19) Which of the following describe(s) correct uses or goals of the *Wizard of Oz* prototyping method?
- (a) To let users experience the interface while the system logic is simulated by a human
 - (b) To develop high-fidelity code quickly for immediate testing
 - (c) To explore user reactions before building back-end logic
 - (d) To generate system documentation based on user feedback
 - (e) To analyze natural user interaction behaviors without disclosing system incompleteness
- 20) Which of the following elements is/are essential when developing a *conceptual model* in UX design?
- (a) Interface metaphors
 - (b) Concrete user interface layout
 - (c) Mapping between user tasks and system functions
 - (d) Data normalization
 - (e) Interaction types
- 21) Which of the following is/are *limitations* of high-fidelity prototypes in UX design?
- (a) May lead stakeholders to believe the system is near-final
 - (b) Time-consuming to modify
 - (c) Not realistic enough for usability testing
 - (d) Often require more resources to develop
 - (e) Cannot be used for marketing or demo purposes
- 22) Which of the following is/are true about *formative evaluation* in UX design?
- (a) Conducted to check whether the final product is ready for release
 - (b) Conducted during the design process to ensure the product meets user needs
 - (c) Aims to assess finished systems in real-world environments
 - (d) Helps refine prototypes or concepts before full development
 - (e) Usually occurs after product deployment

23) Which of the following correctly describe(s) characteristics of *pluralistic walk-throughs*?

- (a) Involves users, designers, and developers reviewing tasks together
- (b) Focuses mainly on error rate and quantitative metrics
- (c) Uses written user scenarios with prototype screens
- (d) Promotes discussion of usability problems at each step
- (e) Conducted only after final product is released

24) Which of the following is/are *controlled evaluation settings* that involve users?

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|----------------------------|-------------------|-----------------------|
| (a) A/B testing | (b) Field Studies | (c) Usability Testing |
| (d) Cognitive Walkthroughs | (e) Experiments | |

25) Which of the following statements is/are true about *A/B Testing* in UX evaluation?

- (a) It compares two versions of a design under real user conditions
- (b) It is suitable for early-stage concept evaluation before any implementation
- (c) It is a type of controlled experiment
- (d) It may require thousands of users to detect statistically significant differences
- (e) It focuses only on usability heuristics without real user feedback
